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Expanding NASA and Roscosmos Scientific Collaboration on the International Space Station

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The International Space Station (ISS) is a world-class laboratory orbiting in space. NASA and Roscosmos have developed a strong relationship through the ISS Program Partnership, working together and with the other ISS Partners for more than twenty years. Since 2013, based on a framework agreement between the Program Managers, NASA and Roscosmos are building a joint program of collaborative research on ISS.

This international collaboration is developed and implemented in phases. Initially, members of the ISS Program Science Forum from NASA and TsNIIMash (representing Roscosmos) identified the first set of NASA experiments that could be implemented in the “near term”. The experiments represented the research categories of Technology Demonstration, Microbiology, and Education. Through these experiments, the teams from the “program” and “operations” communities learned to work together to identify collaboration opportunities, establish agreements, and jointly plan and execute the experiments. The first joint scientific activity on ISS occurred in January 2014, and implementation of these joint experiments continues through present ISS operations.

NASA and TsNIIMash have proceeded to develop “medium term” collaborations, where scientists join together to improve already-proposed experiments. A major success is the joint One-Year Mission on ISS, with astronaut Scott Kelly and cosmonaut Mikhail Kornienko, who returned from ISS in March, 2016. The teams from the NASA Human Research Program and the RAS Institute for Biomedical Problems built on their considerable experience to design joint experiments, learn to work with each other’s protocols and processes, and share medical and research data. New collaborations are being developed between American and Russian scientists in complex fluids, robotics, rodent research and space biology, and additional human research. Collaborations are also being developed in Earth Remote Sensing, where scientists will share data from imaging systems mounted on ISS as well as other orbiting spacecraft to improve our understanding of the Earth and its climate.

NASA and Roscosmos continue to encourage international scientific cooperation and expanded use of the ISS Laboratory. “Long-term”, larger collaborations will achieve scientific objectives that no single national science team or agency can achieve on its own. The joint accomplishments achieved so far have paved the way for a stronger international scientific community and improved results and benefits from ISS.